

**1-06 CONTROL OF MATERIAL****1-06.1 Approval of Materials Prior To Use**

Prior to use, the Contractor shall notify the Engineer of all proposed materials. The Contractor shall use the Qualified Product List (QPL), the Aggregate Source Approval (ASA) Database, or the Request for Approval of Material (RAM) form.

All equipment, materials, and articles incorporated into the permanent Work:

1. Shall be new, unless the Special Provisions or Standard Specifications permit otherwise;
2. Shall meet the requirements of the Contract and be approved by the Engineer;
3. May be inspected or tested at any time during their preparation and use; and
4. Shall not be used in the Work if they become unfit after being previously approved.

**1-06.1(1) Qualified Products List (QPL)**

The QPL is a listing of manufactured products that have been evaluated and determined suitable for use in Highway construction.

If the Contractor elects to use the QPL, the most current list available at the time the product is proposed for use, shall be used. The QPL submittal shall be prepared by the Contractor in accordance with the instructions in the QPL and submitted to the Engineer prior to use.

The QPL identifies the approved products, the applicable Specification section, and the basis for acceptance at the project level. The listing is divided into two categories, "Approved" and "Conditionally Approved". "Approved" products are denoted with an "A". Those products may be accepted without additional sampling. "Conditionally Approved" products are denoted with a "CA". The acceptance and use of these products is based upon additional job sampling and/or documentation. All additional acceptance actions need to be completed prior to the material being incorporated into the Work.

The Contractor shall advise the Engineer of the intended items for use from the QPL by reference to the Contract Bid item.

The use of listed products shall be restricted to the Standard Specification for which they are listed and fulfillment of the acceptance requirement defined in the QPL. Qualified products not conforming to the Specifications, not fulfilling the acceptance requirements, or improperly handled or installed, shall be replaced at the Contractor's expense.

To qualify for continued listing on the QPL, products may be sampled and tested for conformance to the Standard Specifications. The Contracting Agency reserves the right to make revisions to the QPL at any time.

If there is a conflict between the QPL and the Contract, the provisions of the Contract shall take precedence over the QPL.

The current QPL can be accessed on-line at [www.wsdot.wa.gov/biz/mats/QPL/QPL.cfm](http://www.wsdot.wa.gov/biz/mats/QPL/QPL.cfm)

**1-06.1(2) Request for Approval of Material (RAM)**

The RAM shall be used when the Contractor elects not to use the QPL or the material is not listed in the QPL. The RAM shall be prepared by the Contractor in accordance with the instructions on the form (DOT 350-071) and submitted to the Engineer for approval before the material is incorporated into the Work.

Approval of the material does not constitute acceptance of the material for incorporation into the Work.

Additional acceptance actions as noted on the RAM need to be completed prior to the materials being incorporated into the Work.

When requesting approval of an item that requires fabrication, both the fabricator and the manufacturer of the base material shall be identified on the RAM.

**1-06.1(3) Aggregate Source Approval (ASA) Database**

The ASA is a database containing the results of WSDOT preliminary testing of aggregate sources. This database is used by the Contracting Agency to indicate the approval status of these aggregate sources for applications that require preliminary testing as defined in the Contract. The ASA 'Aggregate Source Approval Report' identifies the currently approved applications for each aggregate source listed. The acceptance and use of these aggregates is contingent upon additional job sampling and/or documentation.

Aggregates approved for applications on the ASA 'Aggregate Source Approval Report' not conforming to the specificationSpecifications, not fulfilling the acceptance requirements, or improperly handled or installed, shall be replaced at the Contractor's expense.

Aggregate materials that are not approved for use in the ASA data base may be sampled and tested by the Agency, for a specified use on a project, from the source or from a processed stockpile of the material.

For questions regarding the approval status of an aggregate source, contact the WSDOT Regional Materials Engineer for the Region the source is located in. The Contracting Agency reserves the right to make revisions to the ASA database at anytime.

If there is a conflict between the ASA database and the Contract, then the Contract shall take precedence over the ASA database in accordance with [Section 1-04.2](#). The ASA database can be accessed on-line at [www.wsdot.wa.gov/biz/mats/ASA\\_](http://www.wsdot.wa.gov/biz/mats/ASA_)

**1-06.2 Acceptance of Materials****1-06.2(1) Samples and Tests for Acceptance**

The Contractor shall deliver representative samples (from the Contractor, Producer, or Fabricator) to the Engineer without charge before incorporating material into the Work. In providing samples, the Contractor shall provide the Engineer with sufficient time and quantities for testing before use. The Engineer may require samples at any time. Samples not taken by or in the presence of the Engineer will not be accepted for test, unless the Engineer permits otherwise.

The Contractor shall designate specific Contractor employees as points of contact for concrete testing and acceptance. Alternates shall be designated to ensure that direct contact is maintained during concrete placement. If designated by the Contractor to the Engineer, the concrete supplier will receive all 28-day concrete strength test results.

The Project Engineer will designate specific Contracting Agency employees as points of contact for concrete testing and acceptance.

The Contractor may observe any of the sampling and testing performed by the Engineer. If the Contractor observes a deviation from the specified sampling and testing procedures, the Contractor shall verbally describe the deviations observed to the Engineer or designated representative immediately, and shall confirm these observed deviations in writing to the Engineer within 24-hours, referencing the specific procedures and steps. The Engineer will respond in writing within 3 working days of the receipt of the Contractor's written communications.

All field and Laboratory materials testing by the Engineer will follow methods described in Contract documents, or in the Washington State Department of Transportation *Materials Manual*, using qualified testing personnel and calibrated or verified equipment. The standard or tentative standard in effect on the Bid advertising date will apply in each case.

Revisions to the Washington State Department of Transportation Materials Manual or revisions to other Specifications or test methods such as AASHTO, ASTM, or Federal Specifications will be considered as in effect 60 calendar days after publication.

## **1-06.2(2) Statistical Evaluation of Materials for Acceptance**

### **1-06.2(2)A General**

Where specified, acceptance sampling and testing will be done by the Contracting Agency and statistically evaluated for acceptance by the provisions of this subsection. All test results for a lot will be analyzed collectively and statistically by the quality level analysis procedures shown at the end of this subsection to determine the total percent of the lot that is within Specification limits and to determine an appropriate pay factor. Lots and sublots are defined in the appropriate subsection of these Specifications for the material being statistically evaluated.

Quality level analysis is a statistical procedure for determining the percent compliance of the material with these Specifications. Quality level is the computed percent of material meeting these Specifications and is determined from the arithmetic mean, ( $\bar{X}_m$ ), and the sample standard deviation ( $S$ ), for each constituent of the lot.

Any necessary rounding off of test results or calculations will be accomplished according to the individual testing procedure, or, if not defined in the procedure then accomplished according to the following rule:

1. The final significant digit will not be changed when the succeeding digit is less than 5.
2. The final significant digit will be increased by one when the succeeding digit is 5 or greater.

**Table 1**  
**Quality Levels**  
**Quality Level Analysis by Standard Deviation Method**

PU or PL Percent Within Limits for Positive Values of QU or QL	Upper Quality Index QU or Lower Quality Index QL														
	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10 to n=11	n=12 to n=14	n=15 to n=18	n=19 to n=25	n=26 to n=37	n=38 To n=69	n=70 to n=200	n=201 to n=∞
100	1.16	1.50	1.79	2.03	2.23	2.39	2.53	2.65	2.83	3.03	3.20	3.38	3.54	3.70	3.83
99	-	1.47	1.67	1.80	1.89	1.95	2.00	2.04	2.09	2.14	2.18	2.22	2.26	2.29	2.31
98	1.15	1.44	1.60	1.70	1.76	1.81	1.84	1.86	1.91	1.93	1.96	1.99	2.01	2.03	2.05
97	-	1.41	1.54	1.62	1.67	1.70	1.72	1.74	1.77	1.79	1.81	1.83	1.85	1.86	1.87
96	1.14	1.38	1.49	1.55	1.59	1.61	1.63	1.65	1.67	1.68	1.70	1.71	1.73	1.74	1.75
95	-	1.35	1.44	1.49	1.52	1.54	1.55	1.56	1.58	1.59	1.61	1.62	1.63	1.63	1.64
94	1.13	1.32	1.39	1.43	1.46	1.47	1.48	1.49	1.50	1.51	1.52	1.53	1.54	1.55	1.55
93	-	1.29	1.35	1.38	1.40	1.41	1.42	1.43	1.44	1.44	1.45	1.46	1.46	1.47	1.47
92	1.12	1.26	1.31	1.33	1.35	1.36	1.36	1.37	1.37	1.38	1.39	1.39	1.40	1.40	1.40
91	1.11	1.23	1.27	1.29	1.30	1.30	1.31	1.31	1.32	1.32	1.33	1.33	1.33	1.34	1.34
90	1.10	1.20	1.23	1.24	1.25	1.25	1.26	1.26	1.26	1.27	1.27	1.27	1.28	1.28	1.28
89	1.09	1.17	1.19	1.20	1.20	1.21	1.21	1.21	1.21	1.22	1.22	1.22	1.22	1.22	1.23
88	1.07	1.14	1.15	1.16	1.16	1.16	1.16	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
87	1.06	1.11	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.13	1.13
86	1.04	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
85	1.03	1.05	1.05	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
84	1.01	1.02	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
83	1.00	0.99	0.98	0.97	0.97	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.95	0.95	0.95
82	0.97	0.96	0.95	0.94	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
81	0.96	0.93	0.91	0.90	0.90	0.89	0.89	0.89	0.89	0.88	0.88	0.88	0.88	0.88	0.88
80	0.93	0.90	0.88	0.87	0.86	0.86	0.86	0.85	0.85	0.85	0.85	0.84	0.84	0.84	0.84
79	0.91	0.87	0.85	0.84	0.83	0.82	0.82	0.82	0.82	0.81	0.81	0.81	0.81	0.81	0.81

78	0.89	0.84	0.82	0.80	0.80	0.79	0.79	0.79	0.78	0.78	0.78	0.78	0.77	0.77	0.77
77	0.87	0.81	0.78	0.77	0.76	0.76	0.76	0.75	0.75	0.75	0.75	0.74	0.74	0.74	0.74
76	0.84	0.78	0.75	0.74	0.73	0.73	0.72	0.72	0.72	0.71	0.71	0.71	0.71	0.71	0.71
75	0.82	0.75	0.72	0.71	0.70	0.70	0.69	0.69	0.69	0.68	0.68	0.68	0.68	0.68	0.67
74	0.79	0.72	0.69	0.68	0.67	0.66	0.66	0.66	0.66	0.65	0.65	0.65	0.65	0.64	0.64
73	0.76	0.69	0.66	0.65	0.64	0.63	0.63	0.63	0.62	0.62	0.62	0.62	0.62	0.61	0.61
72	0.74	0.66	0.63	0.62	0.61	0.60	0.60	0.60	0.59	0.59	0.59	0.59	0.59	0.58	0.58
71	0.71	0.63	0.60	0.59	0.58	0.57	0.57	0.57	0.57	0.56	0.56	0.56	0.56	0.55	0.55
70	0.68	0.60	0.57	0.56	0.55	0.55	0.54	0.54	0.54	0.53	0.53	0.53	0.53	0.53	0.52
69	0.65	0.57	0.54	0.53	0.52	0.52	0.51	0.51	0.51	0.50	0.50	0.50	0.50	0.50	0.50
68	0.62	0.54	0.51	0.50	0.49	0.49	0.48	0.48	0.48	0.48	0.47	0.47	0.47	0.47	0.47
67	0.59	0.51	0.47	0.47	0.46	0.46	0.46	0.45	0.45	0.45	0.45	0.44	0.44	0.44	0.44
66	0.56	0.48	0.45	0.44	0.44	0.43	0.43	0.43	0.42	0.42	0.42	0.42	0.41	0.41	0.41
65	0.52	0.45	0.43	0.41	0.41	0.40	0.40	0.40	0.40	0.39	0.39	0.39	0.39	0.39	0.39
64	0.49	0.42	0.40	0.39	0.38	0.38	0.37	0.37	0.37	0.37	0.36	0.36	0.36	0.36	0.36
63	0.46	0.39	0.37	0.36	0.35	0.35	0.35	0.34	0.34	0.34	0.34	0.34	0.33	0.33	0.33
62	0.43	0.36	0.34	0.33	0.32	0.32	0.32	0.32	0.31	0.31	0.31	0.31	0.31	0.31	0.31
61	0.39	0.33	0.31	0.30	0.30	0.29	0.29	0.29	0.29	0.29	0.28	0.28	0.28	0.28	0.28
60	0.36	0.30	0.28	0.27	0.27	0.27	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.25	0.25
59	0.32	0.27	0.25	0.25	0.24	0.24	0.24	0.24	0.23	0.23	0.23	0.23	0.23	0.23	0.23
58	0.29	0.24	0.23	0.22	0.21	0.21	0.21	0.21	0.21	0.21	0.20	0.20	0.20	0.20	0.20
57	0.25	0.21	0.20	0.19	0.19	0.19	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
56	0.22	0.18	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15
55	0.18	0.15	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
54	0.14	0.12	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
53	0.11	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
52	0.07	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
51	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Table 2**  
**Pay Factors**  
**Required Quality Level for a Given Sample Size (n) and a Given Pay Factor**

Pay Factor (PF)	n=3	n=4	n=5	n=6	n=7	n=8	n=9	n=10 to n=11	n=12 to n=14	n=15 to n=18	n=19 to n=25	n=26 to n=37	n=38 to n=69	n=70 to n=200	n=201 to n=∞
1.05	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1.04	90	91	92	93	93	93	94	94	95	95	96	96	97	97	99
1.03	80	85	87	88	89	90	91	91	92	93	93	94	95	96	97
1.02	75	80	83	85	86	87	88	88	89	90	91	92	93	94	95
1.01	71	77	80	82	84	85	85	86	87	88	89	90	91	93	94
1.00	68	74	78	80	81	82	83	84	85	86	87	89	90	91	93
0.99	66	72	75	77	79	80	81	82	83	85	86	87	88	90	92
0.98	64	70	73	75	77	78	79	80	81	83	84	85	87	88	90
0.97	62	68	71	74	75	77	78	78	80	81	83	84	85	87	89
0.96	60	66	69	72	73	75	76	77	78	80	81	83	84	86	88
0.95	59	64	68	70	72	73	74	75	77	78	80	81	83	85	87
0.94	57	63	66	68	70	72	73	74	75	77	78	80	81	83	86
0.93	56	61	65	67	69	70	71	72	74	75	77	78	80	82	84
0.92	55	60	63	65	67	69	70	71	72	74	75	77	79	81	83
0.91	53	58	62	64	66	67	68	69	71	73	74	76	78	80	82
0.90	52	57	60	63	64	66	67	68	70	71	73	75	76	79	81
0.89	51	55	59	61	63	64	66	67	68	70	72	73	75	77	80
0.88	50	54	57	60	62	63	64	65	67	69	70	72	74	76	79
0.87	48	53	56	58	60	62	63	64	66	67	69	71	73	75	78
0.86	47	51	55	57	59	60	62	63	64	66	68	70	72	74	77
0.85	46	50	53	56	58	59	60	61	63	65	67	69	71	73	76
0.84	45	49	52	55	56	58	59	60	62	64	65	67	69	72	75
0.83	44	48	51	53	55	57	58	59	61	63	64	66	68	71	74
0.82	42	46	50	52	54	55	57	58	60	61	63	65	67	70	72
0.81	41	45	48	51	53	54	56	57	58	60	62	64	66	69	71
0.80	40	44	47	50	52	53	54	55	57	59	61	63	65	67	70
0.79	38	43	46	48	50	52	53	54	56	58	60	62	64	66	69
0.78	37	41	45	47	49	51	52	53	55	57	59	61	63	65	68
0.77	36	40	43	46	48	50	51	52	54	56	57	60	62	64	67
0.76	34	39	42	45	47	48	50	51	53	55	56	58	61	63	66
0.75	33	38	41	44	46	47	49	50	51	53	55	57	59	62	65

Reject Quality Levels Less Than Those Specified for a 0.75 Pay Factor

**Note:** If the computed Quality Level does not correspond exactly to a figure in the table, use the next lower value.

**1-06.2(2)B Financial Incentive**

As an incentive to produce superior quality material, a pay factor greater than 1.00 may be obtained with the maximum pay factor being 1.05. A lot containing non-Specification material will be accepted provided the Composite Pay Factor reaches the minimum value specified elsewhere. A lot containing non-Specification material which fails to obtain at least the specified minimum Composite Pay Factor will be rejected by the Engineer. The Engineer will take one or more of the following actions when rejected material has been incorporated into the Work:

1. Require complete removal and replacement with Specification material at no additional cost to the Contracting Agency.
2. At the Contractor's written request, allow corrective work at no additional cost to the Contracting Agency and then an appropriate price reduction that may range from no reduction to no payment.
3. At the Contractor's written request, allow material to remain in place with an appropriate price reduction that may range from a designated percentage reduction to no payment.

Any lot for which at least 3 samples have been obtained, and all of the test results meet one of the appropriate criteria listed below, will receive at least a 1.00 Composite Pay Factor:

1. All test results are within the allowable limits specified for the item, or
2. All test results that only have a lower Specification limit are greater than or equal to that limit, or
3. All test results that only have an upper Specification limit are less than or equal to that limit.

Computation of the quality level in these instances will be for determining the amount of any bonus that might be warranted.

Lots represented by less than 3 samples or unsampled lots will be exempt from statistical based acceptance.

**1-06.2(2)C Removed and Rejected Materials**

The Contractor may, prior to sampling, elect to remove any defective material and replace it with new material at no expense to the Contracting Agency. Any such new material will be sampled, tested, and evaluated for acceptance as a part of the subplot in accordance with this statistical sampling and testing procedure.

The Engineer may reject a subplot that tests show to be defective. Such rejected material shall not be used in the Work, and the results of tests run on the rejected material will not be included in the original lot acceptance tests.



**1-06.2(2)D Quality Level Analysis**

Procedures for determining the quality level and pay factors for a material are as follows:

1. Determine the arithmetic mean, ( $X_m$ ), of the test results for each specified material constituent:

$$X_m = \frac{\sum x}{n}$$

where:  $\sum$  = summation of  
 $x$  = individual test value  
 $n$  = total number test values

2. Compute the sample standard deviation, “S”, for each constituent:

$$S = \left[ \frac{n \sum x^2 - (\sum x)^2}{n(n-1)} \right]^{\frac{1}{2}}$$

where:  $\sum x^2$  = summation of the squares of individual test values  
 $(\sum x)^2$  = summation of the individual test values squared

3. Compute the upper quality index, ( $Q_U$ ), for each constituent:

$$Q_u = \frac{USL - X_m}{S}$$

where: USL (upper Specification limit)  
= target value plus allowable tolerance

4. Compute the lower quality index, ( $Q_L$ ), for each constituent:

$$Q_L = \frac{X_m - LSL}{S}$$

where: LSL (lower Specification limit)  
= target value minus allowable tolerance

5. For each constituent determine  $P_U$  (the percent within the upper Specification limit which corresponds to a given  $Q_U$ ) from Table 1. Note: If a USL is 100.00 percent or is not specified,  $P_U$  will be 100.

**Note:** For negative values of  $Q_U$ ,  $P_U$  is equal to 100 minus the table  $P_U$ . If the value of  $Q_U$  does not correspond exactly to a figure in the table, use the next higher value.

6. For each constituent determine  $P_L$  (the percent within the lower Specification limit which corresponds to a given  $Q_L$ ) from Table 1. Note: If a LSL is zero or not specified,  $P_L$  will be 100.

**Note:** For negative values of  $Q_L$ ,  $P_L$  is equal to 100 minus the table  $P_L$ . If the value of  $Q_L$  does not correspond exactly to a figure in the table, use the next higher value.

7. For each constituent determine the quality level (the total percent within Specification limits):

$$\text{Quality Level} = (P_U + P_L) - 100$$

8. Using the quality level from step 7, determine the pay factor ( $PF_i$ ) from Table 2 for each constituent tested.



9. Determine the Composite Pay Factor (CPF) for each lot.

$$\text{CPF} = \frac{f_1(\overline{\text{PF1}}) + f_2(\overline{\text{PF2}}) + \dots + f_i(\overline{\text{PFI}})}{\sum f_i}$$

$$i = 1 \text{ to } j$$

where:  $f_i$  = price adjustment factor listed in these  
Specifications for the applicable material  
 $j$  = number of constituents being evaluated

10. Determine an item adjustment factor:

$$(\text{item}) \text{ adjustment factor} = \text{CPF} - 1$$

The (item) adjustment factor will be applied to the unit Contract price for specific materials. For specific materials, the (item) adjustment factor will be identified as “Quality Incentive Factor,” “Compliance Incentive Factor,” etc.

### 1-06.3 Manufacturer’s Certificate of Compliance

When authorized by these Specifications or the Special Provisions and prior to use, the Engineer may accept certain materials on the basis of a Manufacturer’s Certificate of Compliance as an alternative to material inspection and testing.

The Contractor may request, in writing, authority from the Engineer to install such materials prior to submitting the required certification; however, no payment will be made for the Work in the absence of an acceptable Manufacturer’s Certificate of Compliance. The Contracting Agency reserves the right to deny the request for good cause. If for any reason the Contractor has not provided an acceptable Manufacturer’s Certificate of Compliance by the Physical Completion Date established by [Section 1-08.5](#), the Contracting Agency will assess the usefulness of the installed material. At the Engineer’s discretion, the Contracting Agency will either require replacement of the material by the Contractor at no expense to the Contracting Agency or process the final payment as provided by [Section 1-09.9](#) without paying for the materials or any portion of the Work performed to install the materials provided on such a basis. The unit Contract prices for the Work shall be used to determine the amount to be withheld. Where unit Contract prices do not exist, as in a lump sum item, the amount to be withheld shall be an equitable adjustment, covering labor, equipment and materials, determined in accordance with [Section 1-09.4](#).

The Manufacturer’s Certificate of Compliance must identify the manufacturer, the type and quantity of material being certified, the applicable Specifications being affirmed, and the signature of a responsible corporate official of the manufacturer and include supporting mill tests or documents. A Manufacturer’s Certificate of Compliance shall be furnished with each lot of material delivered to the Work and the lot so certified shall be clearly identified in the certificate.

All materials used on the basis of a Manufacturer’s Certificate of Compliance may be sampled and tested at any time. Any material not conforming to the requirements will be subject to rejection whether in place or not. The Contracting Agency reserves the right to refuse to accept materials on the basis of a Manufacturer’s Certificate of Compliance.

**1-06.4 Handling and Storing Materials**

In storage and handling, the Contractor shall protect materials against damage from careless handling, from exposure to weather, from mixture with foreign matter, and from all other causes. The Engineer will reject and refuse to test materials improperly handled or stored.

The Contractor shall repair, replace, or make good all Contracting Agency-provided materials that are damaged or lost due to the Contractor's operation or while in the Contractor's possession, at no expense to the Contracting Agency.

**1-06.5 Owners Manuals and Operating Instructions**

For equipment and materials that are permanently incorporated in the Work, the Contractor shall provide to the Project Engineer all owners manuals and operating instructions furnished by the equipment or material manufacturer.

**1-06.6 Sieves for Testing**

Test sieves shall be made either: (1) of woven wire cloth conforming to AASHTO Designation M 92 or ASTM Designation E 11, or (2) of square-hole, perforated plates conforming to ASTM Designation E 323.